

JC
JCWSCS 08 DEC 2004

Dec-07-04 04:51pm From:HBS&R

1978-341-0136

T-821 P.01/06 F-782

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.
530 Virginia Road, P.O. Box 9133
Concord, MA 01742-9133

Telephone: (978) 341-0036

Facsimile: (978) 341-0136

FACSIMILE COVER SHEET

Examiner: Office of Initial Patent Examination
Customer Service Center

Date: December 7, 2004

Client Code: 1086

Facsimile No.: 703-746-9195

From: Troy T. Svihl, Esq.

Subject: Request for Corrected Filing Receipt
Docket No.: 1086.2017-001
Applicants: Qingsheng Zheng, *et al.*
Application No.: 10/804,828
Filing Date: March 19, 2004

Number of pages including this cover sheet: 6

Please confirm receipt of facsimile: Yes X No

Sir:

Please see attached Request for Corrected Filing Receipt for Utility Application with attached edited Updated Filing Receipt and page one of the Specification of the Utility Application.

@PFD\corp\...ODMA\MHODMA\HBSR05.iManage\518256.1

Privileged and Confidential - All information transmitted hereby is intended only for the use of the addressee(s) named above. If the reader of this message is not the intended recipient or the employee or agent responsible for delivering the message to the intended recipient(s), please note that any distribution or copying of this communication is strictly prohibited. Anyone who received this communication in error is asked to notify us immediately by telephone and to destroy the original message or return it to us at the above address via first class mail.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Qingsheng Zheng, Magiel J. Harmse, Kent Rasmussen, and Blaine McIntyre
Application No.: 10/804,828 Group: 2121
Filed: March 19, 2004 Examiner: Not Assigned
Confirmation No.: 7115
For: METHODS AND ARTICLES FOR DETECTING, VERIFYING, AND
REPAIRING COLLINEARITY IN A MODEL OR SUBSETS OF A MODEL

CERTIFICATE OF MAILING OR TRANSMISSION	
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, or is being facsimile transmitted to the United States Patent and Trademark Office on:	
<u>12-7-04</u>	<u>Denise Caredeo</u>
Date	Signature
<u>Denise Caredeo</u>	
Typed or printed name of person signing certificate	

REQUEST FOR CORRECTED FILING RECEIPT
FOR UTILITY APPLICATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

We hereby request that the following items of information be corrected to the Filing Receipt for the subject application received in this office on August 30, 2004.

The errors and corrections appear below.

The name of the first inventor was mistyped on the filed Declaration and appeared also on the Corrected Filing Receipt. The correct spelling of the name is Qingsheng Zheng, as it appeared on the first page of the filed specification.

10/804,828

-2-

Enclosed are copies of the Filing Receipt with changes noted in red and a copy of the first page of specification.

Pursuant to instructions in the February 29, 2000 O.G., we hereby request that the errors which are identified above be corrected in the captioned application to which this request for correction is directed. It is understood that the Patent Office will issue an automatically-generated, corrected Filing Receipt in this and, if applicable, any other affected applications.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By 

Troy T. Svihl

Registration No.: 55,845

Telephone: (978) 341-0036

Facsimile: (978) 341-0136

Concord, MA 01742-9133

Date:

Dec. 7, 2004



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 www.uspto.gov

APPL NO.	FILING OR 371 (C) DATE	ART UNIT	FIL FEE REC'D	ATTY DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/804,828	03/19/2004	2121	1202	1086.2017-001	8	32	4

021005

HAMILTON, BROOK, SMITH & REYNOLDS, P C
 530 VIRGINIA ROAD
 P.O BOX 9133
 CONCORD, MA 01742-9133

CONFIRMATION NO. 7116

UPDATED FILING RECEIPT



OC000000013660171

Date Mailed: 08/27/2004

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U S APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Filing Receipt Corrections, facsimile number 703-746-9195. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

Applicant(s)

Qinsheng Zheng, Sugar Land, TX,
 Magiel J. Harmse, Cambridge, UNITED KINGDOM;
 Kent Rasmussen, Clinton, WA;
 Blaine McIntyre, Cochrane, CANADA,

Domestic Priority data as claimed by applicant

This appln claims benefit of 60/457,060 03/21/2003

BEST AVAILABLE COPY

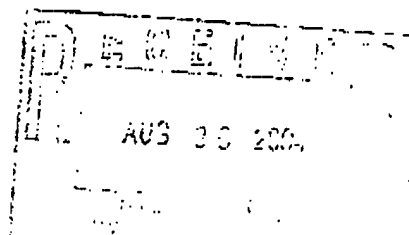
Foreign Applications

If Required, Foreign Filing License Granted: 06/01/2004

Projected Publication Date: 12/09/2004

Non-Publication Request: No

Early Publication Request: No



Title

Methods and articles for detecting, verifying, and repairing collinearity in a model or subsets of a

model

Preliminary Class

700

**LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15**

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Office of Export Administration, Department of Commerce (15 CFR 370.10 (j)), the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

BEST AVAILABLE COPY

- 1 -

Date. MARCH 19, 2004 Express Mail Label No. EV 052031493 US

Inventors: Qingsheng Zheng, Magiel J. Harmse, Kent Rasmussen,
and Blaine McIntyre

Attorney's Docket No.: 1086.2017-001

METHODS AND ARTICLES FOR DETECTING, VERIFYING, AND REPAIRING COLLINEARITY IN A MODEL OR SUBSETS OF A MODEL

RELATED APPLICATION

This application claims the benefit of U.S. Provisional Application No.
5 60/457,060, filed on March 21, 2003. The entire teachings of that application are
incorporated herein by reference.

BACKGROUND OF THE INVENTION

Model Predictive Control (herein referred to as "MPC") is a technology utilized
in various Advanced Process Control (herein referred to as "APC") systems. MPC-
10 based systems have been implemented on thousands of refining and chemical processes
over the past two decades. DMCplus®, and the earlier version, DMC, (both available
from Aspen Technology, Inc. of Cambridge, Massachusetts) is a widely used MPC-
based system. In an MPC-based system, a model is used to predict the future behavior
of a process, given the current and history input information (e.g., measurements of
15 process conditions). An optimized control plan is calculated such that the predicted
future response and the control action needed to achieve the response will satisfy certain
predefined criteria. Once the calculated control plan is implemented (e.g., after the first
point of the control move is implemented), the process measurements are collected and
fed back to the controller to update the model predictions. A new control plan
20 calculation is then initiated.

In an MPC-based controller, the model plays a central role. The model not only
dictates the accuracy of the predictions, but it also affects the control actions. Model